IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Kevin T. Ivers

Serial No.: 10/600,239

Filed: June 19, 2003

For: GAMUT FALSE COLOR DISPLAY

Examiner: Brian P. Yenke

Art Unit: 2622

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Appeal Brief in Accordance With 37 C.F.R. § 41.37

Dear Sir:

This is an appeal from the Examiner's final rejection of the above-identified application dated October 6, 2006.

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Real Party in Interest

The real party in interest in this case is Appellant's assignee, Tektronix, Inc., an Oregon corporation.

Related Appeals and Interferences

There are no prior and pending appeals, interferences or judicial proceedings known to Appellant, Appellant's legal representative or assignee which may be related to, directly affect or have a bearing on the Board's decision in this appeal.

Status of Claims

Claims 1-2, 4-6, 18-19, and 21-23 stand finally rejected under 35 U.S.C. § 102(b) and are being appealed.

Claims 7 and 24 stand finally rejected under 35 U.S.C. § 103(a) and are being appealed.

Claims 3, 8-10, 20, and 25-27 stand objected to as being dependent upon a rejected base claim.

Claims 15-17 are cancelled.

Status of Amendments

No amendments have been submitted by Appellant after the Examiner's final rejection.

Summary of Claimed Subject Matter

Independent claim 1 is in "means plus function" form in accordance with 35 U.S.C. § 112 ¶ 6. An apparatus receives an input video signal. (Page 4, line 3 and Figure 1A: signals Y, Cb, and Cr.) A gamut error signal is derived from the input video signal. (Page 4, lines 2-23 and Figures 1A and 1B: chrominance magnitude indicator 12, color converter 14, adder 16, subtractor 18, comparators 20-44.) A gamut false color display is generated from the gamut error signal and a luminance component of the input video signal, with each pixel of the display being in monochrome except when the gamut error signal indicates a gamut error, in which case a false color is provided in lieu of the monochrome for each pixel associated with the gamut error. (Page 4, line 23 – page 5, line 15 and Figures 1A and 1B: false color display generator 48)

Independent claim 18 is analogous to claim 1 but in "method" form.

Claim 7 depends ultimately from independent claim 1. In response to the gamut error, the apparatus of claim 1 captures and timestamps a portion of the input video signal. (Page 6, lines 8-12 and Figure 1B: field gamut error counter 50 and timestamp/snapshot logic 52)

Claim 24 is analogous to claim 7 but in "method" form.

Claims 2-6 and 8-14 depend either directly or ultimately from claim 1.

Claims 19-23 and 25-31 depend either directly or ultimately from claim 18.

Grounds of Rejection to be Reviewed on Appeal

Whether claims 1-2, 4-6, 18-19, and 21-23 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by Penney (U.S. Patent No. 4,707,727).

Whether claims 7 and 24 are unpatentable under 35 U.S.C. § 103(a) over Penney in view of the Examiner's Official Notice that time stamping is used in the gamut correction field to log/account at what time a video signal encountered an error and thus allow a system to account and correct for the error.

Argument

Rejection of Claims 1-2, 4-6, 18-19, and 21-23 under 35 U.S.C. § 102(b)

The Examiner rejected claims 1-2, 4-6, 18-19, and 21-23 under 35 U.S.C. § 102(b) as being anticipated by Penney. Appellant respectfully traverses.

"A person shall be entitled to a patent unless— . . . (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States . . ." 35 U.S.C. § 102(b). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). (MPEP § 2131)

With regard to independent claims 1 and 18, Penney does not describe "each pixel being in monochrome except when the gamut error signal indicates a gamut error" as recited in claims 1 and 18. The Examiner asserts that Penney does describe this limitation ("[I]f there is no error the pixels are in a single color . . ." Final Rejection, page 2, ¶ 1) but Appellant cannot agree because Penney contains no evidence whatsoever to support the Examiner's assertion. In fact, in the absence of a gamut error, Penney's display 20 simply displays the image represented by the input signal "video in" (Column 3, lines 50-56 and Figure 4) which is defined as "luminance and color difference components Y, R-Y, and B-Y." (Column 3, lines 37-38) That is, "video in" is a *standard non-monochromatic* video signal, and the image displayed on the display is a *standard non-monochromatic* image. In the absence of a gamut error, there is no indication that the pixels of Penney's display are "monochrome," which one of ordinary skill in the art of video equipment understands to mean having equal values of red,

green, and blue, or "no color," with the luminance component being used to set the intensity of the pixel. (Page 3, lines 2-3 and page 5, lines 1-3).

The Examiner does not cite any evidence to support his position, but instead argues that because the individual color component signals *themselves* represent a single-color (e.g. Red, Green, Blue), then the displayed image must *also* be a single color. The Examiner writes:

> "Penny discloses a system which provides a *single color* (luminance and color difference signals) to display modifier 18 and display 20 . . ." (Final Rejection, page 2, ¶ 1, emphasis added)
>
> "[T]he primary color components include 3 *single color* components (Y, B-Y and R-Y) in addition to their converted values R,G,B which are also *indicative of a single color* . . . *[T]he pixels/dots are displayed using one of these primary color components* . . ." (Advisory action, page 2, emphasis added)

The Examiner's reasoning is inconsistent with the understanding of one of ordinary skill in the art in video equipment. Certainly, the "Red" component of an RGB signal indicates red alone, but it does not follow that a display driven by an RGB signal is a "monochrome display."

Accordingly, because Penney does not describe "each pixel being in monochrome except when the gamut error signal indicates a gamut error," Penney does not anticipate claims 1 and 18, and thus Appellant requests that the rejection of claims 1 and 18 under 35 U.S.C. § 102(b) be reversed.

Claims 2, 4-6, and 19, 21-23 are patentable because they depend from claims 1 and 18 respectively, both of which are patentable for the reason discussed above. Accordingly, Appellant requests that the rejection of claims 2, 4-6, and 19, 21-23 under 35 U.S.C. § 102(b) be reversed.

Rejection of Claims 7 and 24 under 35 U.S.C. § 103(a)

The Examiner rejected claims 7 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Penney in view of the Examiner's Official Notice that time stamping is used in the gamut correction field to log/account at what time a video signal encountered an error and thus allow a system to account and correct for the error. Appellant respectfully traverses.

"A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a). "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974), MPEP § 2143.03.

Claims 7 and 24 are patentable because they depend ultimately from claims 1 and 18 respectively, both of which are patentable for the reason discussed above. Furthermore, neither Penney nor the Examiner's Official Notice nor their combination teaches or suggests "each pixel being in monochrome except when the gamut error signal indicates a gamut error," for the reasons discussed above in regard to claims 1 and 18, and thus claims 7 and 24 are not rendered obvious by a combination of Penney and the Examiner's Official Notice. For both of these reasons, Appellant requests that the rejection of claims 7 and 24 under 35 U.S.C. § 103(a) be reversed.

Conclusion

For all these reasons, Appellant requests that the Examiner's rejection of claims 1-2, 4-7, 18-19, and 21-24 be reversed, and that this case be passed on to issuance.

Respectfully submitted,

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Claims Appendix

1. An apparatus for generating a gamut false color display having a plurality of pixels comprising:

means for deriving a gamut error signal from an input video signal; and

means for generating the gamut false color display from the gamut error signal and a luminance component of the input video signal, each pixel being in monochrome except when the gamut error signal indicates a gamut error, in which case a false color is provided in lieu of the monochrome for each pixel associated with the gamut error.

2. The apparatus as recited in claim 1 wherein the deriving means comprises:

means for generating a chrominance magnitude signal from the input video signal; and

means for combining the chrominance magnitude signal with the luminance component to produce the gamut error signal.

3. The apparatus as recited in claim 2 wherein the combining means comprises:

means for additively and subtractively combining the chrominance magnitude signal with the luminance component to produce a composite signal; and

means for comparing the composite signal with a plurality of threshold values to produce the gamut error signal.

4. The apparatus as recited in claim 1 wherein the deriving means comprises:

means for converting the input video signal into a plurality of component signals; and

means for comparing the component signals with a plurality of threshold values to produce the gamut error signal.

5. The apparatus as recited in claim 1 wherein the deriving means comprises:

means for converting the input video signal into a plurality of component signals; and

means for comparing a selected one of the component signals with a plurality of threshold values to produce the gamut error signal.

6. The apparatus as recited in claim 1 further comprising means for capturing a portion of the input video signal in response to the gamut error.

7. The apparatus as recited in claim 6 wherein the capturing means comprises means for timestamping the portion.

8. The apparatus as recited in claim 6 further comprising means for counting a number of gamut errors within the portion to produce a gamut error count such that the portion is captured by the capturing means when the gamut error count exceeds a specified value.

9. The apparatus as recited in claims 3, 4 or 5 wherein the plurality of threshold values are selected from the group consisting of a near high gamut error value, a high gamut error value, a near low gamut error value and a low gamut error value.

10. The apparatus as recited in claim 9 wherein the false color comprises a first color for a gamut error high state, a second color for a gamut error near high or near low state and a third color for a gamut error low state, the first, second and third colors being different from monochrome.

11. The apparatus as recited in claim 6 further comprising means for providing persistence for the portion.

12. The apparatus as recited in claim 11 wherein the persistence is variable.

13. The apparatus as recited in claim 12 wherein the persistence is fixed.

14. The apparatus as recited in claims 11, 12 or 13 wherein the persistence is reset when the portion is captured.

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. A method of generating a gamut false color display having a plurality of pixels comprising the steps of:

deriving a gamut error signal from an input video signal; and

generating the gamut false color display from the gamut error signal and a luminance component of the input video signal, each pixel being in monochrome except when the gamut error signal indicates a gamut error, in which case a false color is provided in lieu of the monochrome for each pixel associated with the gamut error.

19. The method as recited in claim 18 wherein the deriving step comprises the steps of:

generating a chrominance magnitude signal from the input video signal; and

combining the chrominance magnitude signal with the luminance component to produce the gamut error signal.

20. The method as recited in claim 19 wherein the combining means comprises the steps of:

additively and subtractively combining the chrominance magnitude signal with the luminance component to produce a composite signal; and

comparing the composite signal with a plurality of threshold values to produce the gamut error signal.

21. The method as recited in claim 18 wherein the deriving step comprises the steps of:

converting the input video signal into a plurality of component signals; and

comparing the component signals with a plurality of threshold values to produce the gamut error signal.

22. The method as recited in claim 18 wherein the deriving step comprises the steps of:

converting the input video signal into a plurality of component signals; and

comparing a selected one of the component signals with a plurality of threshold values to produce the gamut error signal.

23. The method as recited in claim 18 further comprising the step of capturing a portion of the input video signal in response to the gamut error.

24. The method as recited in claim 23 wherein the capturing step comprises the step of timestamping the portion.

25. The method as recited in claim 23 further comprising the step of counting a number of gamut errors within the portion to produce a gamut error count such that the portion is captured by the capturing step when the gamut error count exceeds a specified value.

26. The method as recited in claims 20, 21 or 22 wherein the plurality of threshold values are selected from the group consisting of a near high gamut error value, a high gamut error value, a near low gamut error value and a low gamut error value.

27. The method as recited in claim 26 wherein the false color comprises a first color for a gamut error high state, a second color for a gamut error near high or near low state and a third color for a gamut error low state, the first, second and third colors being different from monochrome.

28. The method as recited in claim 18 further comprising the step of providing persistence for the portion.

29. The method as recited in claim 28 wherein the persistence is variable.

30. The method as recited in claim 28 wherein the persistence is fixed.

31. The method as recited in claims 28, 29 or 30 wherein the persistence is reset when the portion is captured.

Evidence Appendix

No evidence was submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132, and no other evidence was entered by the Examiner.

Related Proceedings Appendix

There are no related proceedings identified in this Brief.